

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Ronald Pfeifer, et al.	:	Date: October 29, 2007
Group Art Unit:	2179	:	IBM Corporation
Examiner:	M. Tran	:	Intellectual Property Law
Serial No.:	10/601,996	:	Dept. 917, Bldg. 006-1
Filed:	June 23, 2003	:	3605 Highway 52 North
Title:	BEHAVIOR ANALYSIS BASED OPTIMIZATION OF NAVIGATION IN E-COMMERCE USER INTERFACES	:	Rochester, MN 55901

Commissioner for Patents
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**APPEAL BRIEF IN SUPPORT OF APPEAL
FROM THE PRIMARY EXAMINER TO THE BOARD OF APPEALS**

Sir:

This is an appeal of a Final Rejection under 35 U.S.C. §112 and 35 U.S.C. §103(a) of claims 1-19 of Application Serial No. 10/601,996, filed June 23, 2003. This brief is submitted pursuant to a Notice of Appeal filed August 29, 2007, as required by 37 C.F.R. §1.192.

1. Real Party in Interest

International Business Machines Corporation of Armonk, NY, is the real party in interest. The inventors assigned their interest as recorded on December 12, 2003 at Reel 014191, Frame 0522.

Docket No. DE920010116US1
Serial No. 10/601,996

2. Related Appeals and Interferences

There are no related appeals nor interferences pending with this application.

3. Status of Claims

Claims 1-19 are pending and stand finally rejected, and are on appeal herein. The claims on appeal are set forth in the Appendix of Claims

4. Status of Amendments

An amendment after final rejection was submitted on July 12, 2007. By Advisory Action dated July 23, 2007, the Examiner indicated that the amendment would be entered, but would not place the application in condition for allowance.¹

5. Summary of Claimed Subject Matter

The invention herein relates to the analysis of user behavior in navigating an interface, particularly in navigating a website interface. Independent claims 1 and 9 recite a method and computer program, respectively, wherein a “success element” is defined and the success element is correlated to user navigation behavior. Independent claim 17 recites a method wherein a “success element” is defined and a subset of user

¹ In addition to responding by argument to the outstanding prior art and enablement rejections, the amendment corrected an objection to the use of the term “computer-readable program.” The amendment has apparently resolved this objection, and it is no longer at issue.

web sessions is identified based on the success element to analyze the differences between behaviors of successful and unsuccessful users.

In accordance with claim 1, a method of analyzing user behavior in a man-machine interface of a data processing system in which user action is tracked is provided [Spec. p. 2, lines 2-22]. At least one success element associated with user navigation occurring during a user session is defined [Spec. p. 2, lines 23-24; p. 3, lines 8-18; p. 8, lines 3-23]. User navigation information reflecting user navigation behavior from a plurality of user sessions is stored, the user navigation information being associated with the success element [Spec. p. 3, lines 1-3; p. 7, line 14 - p. 8, line 2; p. 9, line 2 - p. 10, line 19; Fig. 1, steps 130-170]. The success element is correlated within the user navigation information to user navigation behavior occurring during the plurality of sessions [Spec. p. 3, lines 4-5; p. 10, lines 12-25; p. 1, lines 10-23; Fig. 2, steps 210-230]. A statistical analysis is performed on the different sets of navigation information collected in different user sessions [Spec. p. 3 lines 6-7; p. 10, line 20 - p. 11, line 2; p. 12, lines 1-3; Fig. 2, step 240].

In accordance with claim 9, a computer program stored on a computer-readable medium is configured to perform certain steps. [Spec. p. 2, lines 2-22; p. 15, line 26 - p. 16, line 6]. At least one success element associated with user navigation occurring during a user session is defined [Spec. p. 2, lines 23-24; p. 3, lines 8-18; p. 8, lines 3-23]. User navigation information reflecting user navigation behavior from a plurality of user sessions is stored, the user navigation information being associated with the success element [Spec. p. 3, lines 1-3; p. 7, line 14 - p. 8, line 2; p. 9, line 2 - p. 10, line 19; Fig. 1, steps 130-170]. The success element is correlated within the user navigation information to user navigation behavior occurring during the plurality of sessions [Spec. p. 3, lines 4-

5; p. 10, lines 12-25; p. 1, lines 10-23; Fig. 2, steps 210-230]. A statistical analysis is performed on the different sets of navigation information collected in different user sessions [Spec. p. 3 lines 6-7; p. 10, line 20 - p. 11, line 2; p. 12, lines 1-3; Fig. 2, step 240].

In accordance with claim 17, a method of analyzing user behavior in a web interface is provided [Spec. p. 2, lines 2-22]. At least one success element associated with user navigation of a web site interface during a user web session is defined, the success element comprising at least one user input indicating successful completion of an operation by the user [Spec. p. 2, lines 23-24; p. 3, lines 8-18; p. 8, lines 3-23]. User navigation information reflecting user navigation behavior from a plurality of user web sessions is stored, the user navigation information being associated with the success element [Spec. p. 3, lines 1-3; p. 7, line 14 - p. 8, line 2; p. 9, line 2 - p. 10, line 19; Fig. 1, steps 130-170]. The user navigation information is analyzed to identify differences between the behaviors of users in a first subset of web sessions and behaviors of users in web sessions not in the first subset, the first subset being web sessions for which the success element as defined is associated with user navigation of the web site interface [Spec. p. 2, line 2 - p. 3, lines 7; p. 3, lines 22-23; p. 10, line 10 - p. 11, line 7 - p. 12, line 26; Fig. 1, feature 100; Fig. 2, steps 210-240; Fig. 3].

6. Grounds of Rejection To Be Reviewed on Appeal

Claims 17-19 are finally rejected under 35 U.S.C. §112, first paragraph, as non-enabled. Claims 1-19 are finally rejected under 35 U.S.C. §103(a) as unpatentable over Venkatesan (U.S. Patent 6,928,474). The issues in this appeal are first, whether claims 17-19 are sufficiently enabled by the specification, and second, whether the claims are prima facie obvious over *Venkatesan*.

7. Argument

Appellants contend that the Examiner failed to establish adequate grounds of rejection for the following reasons:

- I. The Examiner improperly rejected claims 17-19 under 35 U.S.C. 112, first paragraph, because the description of the specification adequately enables the key claim limitation. [page 7 below]
- II. The Examiner improperly rejected claims 17-19 under 35 U.S.C. §103(a) because neither *Venkatesan* nor apparently assumed art discloses or otherwise renders obvious the key features of the claims, specifically that navigation data is analyzed to identify navigation differences between a subset of user sessions defined by success criteria and user sessions not in the subset. [page 12 below]
- III. The Examiner improperly rejected claims 1-16 under 35 U.S.C. §103(a) because neither *Venkatesan* nor apparently assumed art discloses or otherwise renders obvious the key features of the claims, specifically that navigation data is analyzed to correlate a success definition with user navigation behavior. [page 16 below]

Overview of Invention

A brief overview of appellants' invention in light of existing art will be helpful in appreciating the issues herein. Appellants' invention relates to user interface, and particularly to an analytical tool or technique for analyzing interactive computer

interfaces. It is preferably intended for analyzing a web interface, in which a web server provides multiple web pages which can be interactively navigated by the user.

It is known to track user navigation behavior by collecting statistics concerning the frequency of “hits” on certain web sites or web pages. But appellants observe that much additional useful information can be obtained by distinguishing between the behaviors of a subset of users who achieve some goal, as opposed to those who do not. Appellants therefore propose a technique whereby a “success element” is defined and used to identify some subset of user behavior, i.e., the behavior of users who achieve success as defined by the success element. The term “success element” is broadly defined in the specification as anything which might achieve some goal associated with using the interface. In a simple example, a “success element” might be the completion of an on-line purchasing transaction from a merchant which offers items for sale through a web site. By defining success criteria, it is possible to analyze user behavior as it correlates to the success criteria. In particular it is possible to analyze the differences in interactive interface behavior (e.g. differences in the way web pages are navigated) between users who are ultimately “successful” and those who are not. The insight gained from such analysis might be used in a variety of ways, not always predictable. For example, in the case of the on-line purchase, it may provide insight as to why some potential customers chose not to purchase anything, or not to purchase a particular item, which could be related to the web interface itself (customer doesn’t notice something, doesn’t understand something, or finds navigation too difficult), or could be related to other considerations (features, color selections, sizes, price, etc.) This insight may lead to a modification of the interface to correct apparent deficiencies, or may lead to some other action to increase the proportion of successful users.

A critical element of appellants' invention is therefore that navigation behaviors of users who are ultimately "successful" as opposed to navigation behaviors of those who are not, are somehow identified, according to the defined "success element".

Appellants believe that this distinction is at the heart of the issues in the present appeal. While the claims do not specify any particular type of "success element", there must be some notion of "success" according to which user navigation behavior is classified. The cited art fails to show any distinction made between navigation behavior of successful users and navigation behavior of those who are not.

I.. The Examiner improperly rejected claims 17-19 under 35 U.S.C. 112, first paragraph, because the description of the specification adequately enables the key claim limitation.

During prosecution, appellants added independent claim 17 in an attempt to clarify the nature of the present invention and emphasize the critical features which distinguish it over the prior art. Claim 17 recites in part:

- I. A method for analyzing user behavior in a web interface, comprising ...:
 - (a) defining at least one success element associated with user navigation ... ;
 - (b) storing user navigation information ... ; and
 - (c) *analyzing said user navigation information to identify differences between the behavior of users navigating within said web site during a first subset of said plurality of user web sessions and the behavior of users navigating within said web site during user web sessions which are not within said first subset of said plurality of user web sessions, said first subset ... being user web sessions ... for which at least one said success element as defined by said defining step is associated with user navigation of said interface provided by said web site during the respective user web session, said first subset being fewer than all said user web sessions. [emphasis added]*

Thus, claim 17 recites that *different subsets of user web sessions* are identified according to the “success element”, and that navigation behavior is analyzed to identify differences in navigation behavior between successful and unsuccessful web sessions. The Examiner object to this limitation as non-enabled by the specification.

It is true that appellants do not employ the exact same language of the claim shown above in their Specification, but there is no legal requirement that the exact same words be used. The Specification refers to “correlating” the success element with stored user navigation information. But it is clear from the context of the entire specification, including the examples given therein, the “correlating” involves, at a fundamental level, making a distinction for purposes of the analysis between user navigation behavior which results in success and that which does not. Put another way, it is not possible to “correlate” success with user navigation actions unless one somehow identifies that subset of data which is associated with success (i.e., navigations which lead to success) and separates them from those which do not.

That data from different subsets of user sessions are identified and treated differently for purposes of analysis is amply shown in various passages of the Specification, among which are the following.

The “Summary of the Invention” is described in the following terms:

With reference to Website improvement, as the main business objective is to sell products or to locate them, it is advantageous for learning about the user's behavior to monitor the *buyer's or successful locator's behavior rather than that of a visitor who stops use of the website without having found or purchased a desired product.*

...
*This is mainly achieved by tracking the navigation of each user.
 Enhancing the path data with which the user finally achieved a particular*

success; for example, locating or purchasing a product; i.e., enhancing the success user path will supply the web site owner with most of information needed to improve the average user navigation.

...

The present invention is based on exploiting the fact that it is useful to learn from successful users; i.e., customers of a Website or end-user in an application program.

According to the basic aspect of the present invention a method and respective system is disclosed for analyzing user behavior in a man-machine interface of a data processing system, like websites, desktop, or palmtop application programs in which user action is tracked. Said method is characterized by the steps of:

- a) defining at least one success element associated with user navigation within said man-machine interface occurring during a user session,
- b) storing user navigation information, which may be associated with said at least one success element, and reflecting the user behavior within said man-machine interface,
- c) *correlating said at least one success element to said stored user navigation information,*
- d) process a statistical analysis on a plurality of different sets of navigation information collected in respective different user sessions.²

In the above passages, we see that a distinction is being made between the successful and the unsuccessful users, and further that the “stored user navigation information” is correlated to the success element, i.e., ***navigation behavior resulting in success is distinguished from navigation behavior not resulting in success.***

The specification further describes collecting user navigation information during a plurality of different user navigation sessions, and storing this information, including the

² Specification, p. 2, line 2 - p. 3, line 7, emphasis added.

storage of success events, when the session is finished. This is shown in Fig. 1 as steps 120-170.³ The specification then discloses:

From there, *all similar results* can be accessed and subjected to an inventive analysis procedure in order to get information about *the way in which the successful user has navigated through the site*. In this main analysis step 180 *different kinds of success elements can be entered by a person skilled in the art, in order to set the analysis focus* according to an individual evaluation goal. Thus, the selection of the success elements used for analysis is modified accordingly. For example, when the website offers clothes, a success element can be added which is represented by pressing a button: “buy this pair of trousers”.⁴

I.e., the results can be filtered to identify the “behavior of users navigating with said web site during a first subset of said plurality of user web sessions” (the successful users), vis-a-vis those not in the first subset (the unsuccessful users).

Further, the specification offers a concrete, if very simple, example of an analysis of data involving sessions of three users, two of whom are successful (in the first subset) and one of whom is not successful (in the second subset). This example is shown in Fig. 3. The following example is further instructive:

It should be noted that by virtue of the present invention a suited restructuring of the website can be undertaken of which at least one essential creative input is the before-mentioned analysis result. *Thus, for example after careful analyzing the analysis result and comparing the main roads taken by most users to the current website shape, maybe a reason can be found, why unsuccessful user Smith did not enter either of pages 3 or 4, the pages which were visited by the successful users*. Maybe an important link was displayed at the wrong place, or too small, or with a misleading context, etc. Thus, the design of this exemplary page 2 can possibly improved in order to avoid a misleading of potential purchasers.⁵

³ As described at Specification p. 10, lines 12-19.

⁴ Specification p. 10, line 20 - p. 11, line 2, emphasis added.

⁵ Specification, p. 12, lines 18-26, emphasis added.

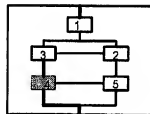
Thus the specification clearly discloses that a success element is defined, that a subset of user web sessions is identified based on the success element, and that an analysis of user behavior subset is performed to identify the characteristic behaviors of successful users (user sessions in the subset) as distinct from those not in the subset.

Finally, the specification identifies Fig. 1, feature 100 as a sample output:

After the analysis including any statistical evaluation which seems to be appropriate to undertake, has completed, the results are present advantageously in a graphical form to a skilled web designer, who may interpret the results, step 190 and improve the navigational structure of the website.

A sample part of the analysis result is depicted with a graphic denoted by reference sign 100. *The thick lines connecting pages 3, 4 and exit represent the main road (statistically determined majority) of the successful visitor type.*⁶

Feature 100 is reproduced at right. As shown in the graphic, thick lines representing the main road of the successful users connect boxes 3, 4 and exit. Thus, the statistically determined ‘typical’ navigation behavior of a first subset of users



(“successful” users) is highlighted to distinguish it from the navigation behavior of users not in the first subset. The graphic of feature 100 is merely one very simple example of how analysis results may be presented, but it clearly shows that users of one class are distinguished from those not in the class, and distinguishes the navigation behavior of those users from the others.

For all the above reasons, the key claim limitations at issue are adequately enabled, and the Examiner’s rejections of claims 17-19 as non-enabled were erroneous.

⁶ Specification, p. 11, lines 3-9, emphasis added.

II. The Examiner improperly rejected claims 17-19 under 35 U.S.C. §103(a) because neither *Venkatesan* nor apparently assumed art discloses or otherwise renders obvious the key features of the claims, specifically that navigation data is analyzed to identify navigation differences between a subset of user sessions defined by success criteria and user sessions not in the subset.

Although claims 17-19 were rejected as obvious over *Venkatesan*, the Examiner appears to be relying on other unstated art in the rejection in combination with *Venkatesan*. The Examiner takes Official Notice of a “success element”, although it is unclear upon what this is based or what is the teaching or extent of the prior art which is officially noticed.⁷ Appellants have attempted to respond to this alleged art as they best understand it. It is appellants’ position that, even assuming a combination of *Venkatesan* and officially noticed art is proper, the combination fails to disclose or render obvious the key features of the claims herein, specifically, that success is defined, and analysis is conducted to identify differences in navigation behavior between a subset of user sessions which meet the definition of success and those which do not.

Venkatesan discloses a system for analyzing user navigation behavior of a web site and modifying the web site in response. In accordance with *Venkatesan*, a web monitor records web navigation sequences performed by each user. The recorded data is then analyzed to predict likely web navigation sequences of future visitors to the web site. This data can be used to improve the web site interface.

⁷ The rejection is formulated by the Examiner as follows:

“Official notice is taken that implementation of at least one success element associated with user navigation. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the well known implementation with the *Venkatesan*’s teaching. Motivation of the combination would have been for the advantage of reliability of an interface.”

Independent claim 17, quoted in part previously, is recited in full below:

17. A method for analyzing user behavior in a web interface, comprising the steps of:

- (a) *defining at least one success element associated with user navigation of an interface provided by a web site during a user web session, said at least one success element comprising at least one user input indicating successful completion of an operation by a user during said user web session;*
- (b) *storing user navigation information from a plurality of said user web sessions, said user navigation information being associated with said at least one success element and reflecting behavior of a plurality of users navigating within said web site during respective user web sessions;* and
- (c) *analyzing said user navigation information to identify differences between the behavior of users navigating within said web site during a first subset of said plurality of user web sessions and the behavior of users navigating within said web site during user web sessions which are not within said first subset of said plurality of user web sessions, said first subset of said plurality of user web sessions being user web sessions of said plurality of user web sessions for which at least one said success element as defined by said defining step is associated with user navigation of said interface provided by said web site during the respective user web session, said first subset being fewer than all said user web sessions.*

Although *Venkatesan* does indeed disclose collecting navigation data and analyzing it with a view toward improving the interface, it does not focus specifically on any particular success criteria. *Venkatesan*'s users are simply lumped together in one big statistical pot which does not distinguish the successful web site visitor from the unsuccessful, according to some pre-defined success criterion. The analysis is therefore done to indicate the behavior of the average or typical user.

In particular, *Venkatesan* fails to disclose the key steps of :

- (a) defining a "success element"; and

(b) identifying, for purposes of analysis, a first subset of user web sessions and the user navigation behaviors occurring during that first subset, as distinct from user web sessions not in the first subset and corresponding user navigation behaviors, the first subset being determined by the previously defined “success element”.

The Examiner appears to concede as much, but takes “Official Notice” of other art, as noted above. As appellants understand this officially noticed art, the Examiner is stating that success elements are known in user navigation. The Examiner appears to take the position that because “success element” is known, it would have been obvious to combine a “success element” with the teachings of *Venkatesan* to form the elements of appellants’ invention.

Appellants submit that this misses the point. A “success element”, in and of itself, might be any number of navigation actions which could be used to indicate success. Appellants concede that *Venkatesan* either discloses or renders obvious the recording of arbitrary user navigation actions, including actions of the type which appellants have used as “success elements”. But that is not what the claims require. The claims require first that *a success element be defined* (as something separate from the analysis), and second that the data be analyzed to *identify differences* between the navigation behavior occurring in a *first subset of user web sessions* and the navigation behavior occurring in *user web session which are not within the first subset*. This second element necessarily implies that navigation data is differentiated according to whether it comes from a successful web session (as success is previously defined) or an unsuccessful web session.

In accordance with appellants’ invention, the success element is a key input parameter of the analysis. Using the “success element” as defined by the defining step,

the analysis divides the user navigation sessions into at least two groups. One of these groups is the “first subset” of user navigation sessions for which the success element is associated with the user navigation, i.e., sessions in which the user is “successful”, as the success criteria are defined; the other group is user navigation sessions not in the first subset.

Venkatesan does not disclose or suggest any of these things, even if it is assumed (as well it might be) that *Venkatesan* records user navigation actions which could reasonably be used as indicators of successful navigation. *Venkatesan* shows that all user navigation data is lumped together for purposes of analysis. There is no pre-existing definition of “success” upon which to base the analysis, and no distinction made between user navigation data from web sessions which met some criteria for success vs. those which did not.

The Examiner’s rejection, as nearly as appellants can understand it, appears to be that *Venkatesan* is inevitably creating subsets of data as part of the analysis (some proportion of users take path X, some other proportion take path Y, some other proportion take path Z). If some such path is arbitrarily called a successful path *after the fact* of the analysis, then there is a subset of “successful” user navigation behaviors and navigation behaviors not in the subset. Again, appellants submit that this misses a key claimed element of the invention. The selection of a subset is not arbitrary. In accordance with appellants invention, “success” is defined by a defining step. It is true that “success element” could mean many different things, but this does not entitle the Examiner to read the limitation out of the claims entirely. The claims still require that success be defined, and that the analysis is something which is responsive to, among

other things, this definition of success. I.e, *the definition of success element is an input parameter of the analysis*, upon which the analytical output depends.

For all the reasons specified above, neither *Venkatesan* nor the officially noticed art, alone or in combination, discloses or otherwise renders obvious the key features of appellants' claims 17-19, and the Examiner's rejections thereof were erroneous.

III. The Examiner improperly rejected claims 1-16 under 35 U.S.C. §103(a) because neither *Venkatesan* nor apparently assumed art discloses or otherwise renders obvious the key features of the claims, specifically that navigation data is analyzed to correlate a success definition with user navigation behavior.

The Examiner rejected claims 1-16 on the same grounds on which claims 17-19 were rejected, discussed above. In general, the above discussion applies as well to claims 1-16, and claims 1-16 are patentable over the cited art for essentially the same reasons discussed above, that discussion being incorporated by reference herein.. The key features of claims 1-16 are analogous to those of claim 17-19, although not recited in precisely the same terms. Although the concepts are similar, the difference in claim language is sufficient to warrant additional consideration herein.

As noted above, claim 17 recites analyzing the navigation data to identify different navigation behaviors occurring during different subsets of user navigation sessions, the subsets being determined by the definition of "success element". Independent claims 1 and 9 also recite the definition of a "success element", but recite that navigation behavior is 'correlated' to the success element. Representative claim 1 recites:

1. A method for analyzing user behavior in a man-machine interface of a data processing system in which user action is tracked, characterized by the steps of:
 - (a) *defining at least one success element associated with user navigation within said man-machine interface occurring during a user session,*
 - (b) *storing user navigation information from a plurality of said user sessions, said user navigation information being associated with said at least one success element and reflecting the user navigation behavior within said man-machine interface occurring during said plurality of said user sessions,*
 - (c) *correlating, within said user navigation information, said at least one success element to user navigation behavior within said man-machine interface occurring during said plurality of said user sessions, and*
 - (d) *performing a statistical analysis on a plurality of different sets of navigation information collected in respective different user sessions.* [emphasis added]

It is appellants' position that, for essentially the same reasons discussed above with respect to claim 17, *Venkatesan* (and the officially noticed art) does not disclose or suggest (a) defining a success element, and (b) correlating the success element to user navigation behavior occurring during the plurality of user sessions.

It is true that "success element" could broadly encompass any of various things. It is also true that "correlating" is expressed in rather broad terms, and could encompass any of various forms of analysis which might somehow show the connection between the success element and certain user navigation behaviors. But the mere fact that the claim limitations are expressed in broad terms does not mean that they are obvious, nor does it mean that the Examiner is entitled to read the limitations out of the claims.

Taken together, steps (a) and (c) require that *the definition of success element be one of the input parameters of the analysis*, and that the output of the analysis necessarily depend on this definition of success element. 'Success element' might

encompass a lot of things, but in order to demonstrate obviousness, there still must be some disclosure or suggestion in the art of defining a success element and using it as an input to the analysis, to which user behavior is correlated.

As explained earlier, *Venkatesan* utterly fails to make any such definition or distinction. *Venkatesan* places all user sessions in one large pot for purposes of analysis. It then analyzes data to show statistically likely paths of user navigation. But the only information one gets out of this analysis is what are the most likely navigation paths *of all users*. There is no correlation of the navigation paths, likely or not, with a pre-existing definition of “success” which serves as an input parameter to the analysis. I.e., there is not correlation of the likelihood of taking a particular path with a definition of “success element”.

Appellants do not doubt that the data provided by *Venkatesan* might be useful, but their own contribution provides analytical information to the web designer above and beyond what is shown in *Venkatesan*. Specifically, in accordance with appellants’ invention, the designer is provided with output showing a *correlation* between a success element (which is an input parameter of the designer’s choosing) and the user navigation behavior. In other words, the designer is shown what user navigation behavior is most commonly associated with a successful outcome, as opposed to what is the most common form of user navigation behavior.

This is a subtle but very important difference. Appellants again refer to their Fig. 1, feature 100, as a very simple illustration of the type of information provided. The heavy navigation lines do not show the most commonly taken navigation path; they show the path which is statistically more likely among the successful users. Appellants submit

that this is useful information, and that no matter how *Venkatesan* is read, there is nothing in *Venkatesan* which discloses providing this type of information.

For all the reasons stated above, neither *Venkatesan* nor the officially notice art, alone or in combination, discloses or otherwise renders obvious the key features of appellants' claims 1-16, and the Examiner's rejections thereof were erroneous.

8. Summary

Appellants disclose and claim novel and unobvious technique for analyzing the behaviors of users of an interface, particularly a web interface. The thrust of their invention is to understand the behaviors of users who are successful in their use of the interface, as opposed to those who are not. In accordance with this goal, success is defined and used as an input to analysis. The analysis distinguishes user navigation behavior associated with success or otherwise correlates the success definition with user navigation behavior. For the reasons explained herein, the specification adequately enables an analysis which distinguishes between user behavior of a "first subset" of web sessions and those not of the first subset, the first subset being determined according to the success element. *Venkatesan*, the primary reference herein, discloses tracking and analyzing user behavior in a web interface to understand the behavior of the typical user. It lumps all user behavior in a single pot for purposes of analysis, and does not disclose or suggest the use of a success definition or any form of analysis to identify or correlate the user behavior with success. The officially noticed art appears to note that success elements would be known, but either alone or in combination with *Venkatesan*, does not disclose or suggest using a success element definition as an input for analysis which correlates user behavior to success. .

For all the reasons stated herein, the rejections for obviousness and non-enablement were improper, and appellants respectfully request that the Examiner's rejections of the claims be reversed.

Date: October 29, 2007

Respectfully submitted,
RONALD PFEIFER, et al.

A handwritten signature in black ink, appearing to read 'Roy W. Truelson', with a long horizontal line extending to the right.

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APPENDIX OF CLAIMS

1 1. A method for analyzing user behavior in a man-machine interface of a data
2 processing system in which user action is tracked, characterized by the steps of:

- 3 (a) defining at least one success element associated with user navigation within
4 said man-machine interface occurring during a user session,
5 (b) storing user navigation information from a plurality of said user sessions, said
6 user navigation information being associated with said at least one success
7 element and reflecting the user navigation behavior within said man-machine
8 interface occurring during said plurality of said user sessions,
9 (c) correlating, within said user navigation information, said at least one success
10 element to user navigation behavior within said man-machine interface
11 occurring during said plurality of said user sessions, and
12 (d) performing a statistical analysis on a plurality of different sets of navigation
13 information collected in respective different user sessions.

1 2. The method according to claim 1 in which user navigation information is collected
2 from user navigation when visiting a Website.

1 3. The method according to claim 1, further comprising the step of graphically
2 representing results of said statistical analysis in a graph-like form.

1 4. The method according to claim 1, further comprising the step of filtering analysis
2 results according to one or more success elements.

1 5. The method according to claim 1 in which said stored user navigation information
2 comprises:

- 3 a) a success element definition,
4 b) location information associated with said success element,
5 c) time information associated with a user action related to said success
6 element, and
7 d) session information identifier which allows to identify different users

1 6. The method according to claim 1 in which user navigation information is collected
2 from user navigation in a user application program.

1 7. The method according to claim 6, further comprising the step of:
2 after a predetermined level of collected navigation data has been achieved, changing the
3 man-machine interface such that user preferences are displayed in an emphasized way.

1 8. The method according to claim 6, in which at least parts of the non-preferred rest
2 of said man-machine interface is displayed in a background way.

1 9. A computer program stored on a computer-readable medium, said computer
2 program being configured to perform the steps of:

- 3 a) defining at least one success element associated with user navigation within
4 said man-machine interface occurring during a user session,
5 (b) storing user navigation information from a plurality of said user sessions, said
6 user navigation information being associated with said at least one success
7 element and reflecting the user navigation behavior within said man-machine
8 interface occurring during said plurality of said user sessions,
9 c) correlating, within said user navigation information, said at least one success
10 element to user navigation behavior within said man-machine interface
11 occurring during said plurality of said user sessions, and
12 d) performing a statistical analysis on a plurality of different sets of navigation
13 information collected in respective different user sessions.

1 10. The computer program of claim 9 in which user navigation information is
2 collected from user navigation when visiting a Website.

1 11. The computer program of claim 9, further comprising the step of graphically
2 representing results of said statistical analysis in a graph-like form.

1 12. The computer program of claim 9, further comprising the step of filtering analysis
2 results according to one or more success elements.

1 13. The computer program of claim 9 in which said stored user navigation information
2 comprises:

- 3 a) a success element definition,
- 4 b) location information associated with said success element,
- 5 c) time information associated with a user action related to said success
6 element, and
- 7 d) session information identifier which allows to identify different users

1 14. The computer program of claim 9 in which user navigation information is
2 collected from user navigation in a user application program.

1 15. The computer program of claim 14, further comprising the step of:
2 after a predetermined level of collected navigation data has been achieved, changing the
3 man-machine interface such that user preferences are displayed in an emphasized way.

1 16. The computer program of claim 14, in which at least parts of the non-preferred rest
2 of said man-machine interface is displayed in a background way.

1 17. A method for analyzing user behavior in a web interface, comprising the steps of:

- 2 (a) defining at least one success element associated with user navigation of an
3 interface provided by a web site during a user web session, said at least one
4 success element comprising at least one user input indicating successful
5 completion of an operation by a user during said user web session;
6 (b) storing user navigation information from a plurality of said user web sessions,
7 said user navigation information being associated with said at least one
8 success element and reflecting behavior of a plurality of users navigating
9 within said web site during respective user web sessions; and
10 (c) analyzing said user navigation information to identify differences between the
11 behavior of users navigating within said web site during a first subset of said
12 plurality of user web sessions and the behavior of users navigating within
13 said web site during user web sessions which are not within said first subset
14 of said plurality of user web sessions, said first subset of said plurality of user
15 web sessions being user web sessions of said plurality of user web sessions
16 for which at least one said success element as defined by said defining step is
17 associated with user navigation of said interface provided by said web site
18 during the respective user web session, said first subset being fewer than all
19 said user web sessions.

1 18. The method of claim 17, wherein said at least one success element comprises at
2 least one user input indicating successful completion of an on-line purchase by the user
3 during said web session.

1 19. The method of claim 17, further comprising the step of modifying said interface
2 provided by said web site responsive to said differences identified by said analyzing step.

APPENDIX OF EVIDENCE

No evidence is submitted.

APPENDIX OF RELATED PROCEEDINGS

There are no related proceedings.